This presentation

What can/can’t it do?
Inputs
How does it work?
Validation
Improvements
Levels of Transportation Modeling

Time
- Daily
- Peak Period/Off Peak
- Hours
- Minutes
- Seconds

Size
- Statewide
- Regional
- City
- Corridor / Neighborhood
- Facility / Street
Transportation Analysis Zones
Regional Truck Model Purpose

- A component of our regional travel demand model
- Compare regional projects impacts on trucks
- Compare how policies impact aggregate measures average speeds and volumes on large facilities
- Forecast future volumes on large facilities
9 am – 3 pm All Volumes

Heavy Truck Volumes
Medium Truck Volumes  Heavy Truck Volumes
Truck Trip Activity Density
More Outputs

Time Savings of projects
Number of Truck Trips
Truck Travel Times
Truck Toll Costs
Truck Vehicle Miles
What can’t it tell us?

Unique behaviors at specific freight distribution centers

How random road incidents impact truck times

What kinds of goods are on the trucks

How the cost of delay depends on the types of goods
Inputs/Sensitivities

Highway network
Travel time
Amount and type of employment
Based on WSDOT’s FASTruck model

- **Trip Generation**
  How many trips are there?

- **Trip Distribution**
  Where do they go?

- **Trip Time of Day**
  What time do they go?

- **Route Assignment**
  What paths do they use?
Truck Categories

Light commercial
small truck or car used for work purpose – 2 axles, <16k lbs

Medium trucks
single-unit semi – 2-4 axles, 16k-52k lbs

Heavy trucks
double/triple-unit semi – 5+ axles, >52k lbs
Trips Rates Differ by Employment Type
Truck Trips Attraction Density

Employment Density
Port of Seattle
Port of Tacoma
Warehouse and Distribution Center in SR167 corridor
Truck Volumes Validation

- 30 count locations – WSDOT Annual Traffic Report
- Low spots at State Road 2 and I-5; SR-512 and West Highway 7
Truck Volume Validation

- Observed
- Modeled
Ensure the model uses correct links
For attractive and unattractive truck routes
Include Freight Network Restrictions
Compare Model to Observed Truck Percentages
Near Term Improvements

• Add network restrictions and refinements to make links attractive or unattractive for trucks
• Calibrate the model to counts and splits by truck type
• Obtain more counts and calibrate
• Look into new GPS truck data sources like ATRI